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EXAMINER	
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ART UNIT	PAPER NUMBER
2863	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,355	PARFITT, RICHARD	
	Examiner	Art Unit	
	TOAN M. LE	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-14,16-22 and 24-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-14,16-22 and 24-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-14, 16-22, and 24-31 are rejected under 35 U.S.C. 102(b) as being anticipated by "Horizontal Core Acquisition and Orientation for Formation Evaluation" by Skopec et al. (referred hereafter Skopec et al.).

Referring to claim 1, Skopec et al. disclose a core orientation device for a core drill, the device comprising:

an arrangement for providing signals associated with a physical orientation of the core orientation device (Figures 6, 7, and 10; page 8, Electronic Multishot Instrument (EMI): 1st paragraph);

processing means for processing the signals provided by the arrangement so as to provide processed data from which a measure of the physical orientation of the core orientation device can be established, the measure being associated with the physical orientation of the device at a particular moment in time (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22);

memory for storing the processed data (page 9, line 11); and

interface means having first means for storing the processed data in the memory and second means for accessing the memory to provide the measure of the physical orientation of core orientation device when required (page 9, lines 12-22); and

means for relating the measure of the orientation of the core orientation device with the present orientation thereof such that the core orientation device can be rotated to reflect the measure of the orientation of the core orientation device (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22; Table 2).

As to claim 2, Skopec et al. disclose a core orientation device for a core drill wherein the physical orientation of the core orientation device comprises a rotational orientation about a longitudinal axis of the core orientation device (page 15, last paragraph to page 16, lines 1-4; Table 2; Figure 6).

Referring to claim 3, Skopec et al. disclose a core orientation device for a core drill wherein the physical orientation of the core orientation device comprises an angular orientation of the longitudinal axis above or below the horizontal plane (page 18, Evaluation of Data: 1st paragraph).

As to claim 4, Skopec et al. disclose a core orientation device for a core drill, wherein the arrangement for providing signals comprises triaxial accelerometer means (page 8, Electronic Multishot Instrument (EMI): 1st paragraph).

As to claim 6, Skopec et al. disclose a core orientation device for a core drill wherein the core orientation device includes input means for inputting the particular moment in time into the processing means and display means for subsequently displaying the measure of the physical

orientation of the device, the measure being associated with the inputted moment in time (page 7, 4th paragraph; page 9, lines 12-22).

Referring to claim 7, Skopec et al. disclose a core orientation device for a core drill wherein the core orientation device is cylindrical and one end of the core orientation device includes the display and input means in the form of a LCD display and keypad (page 9, lines 12-22).

As to claim 8, Skopec et al. disclose a core orientation device for a core drill wherein the core orientation device has a body in the form of a housing having at least one threaded end for being engaged by an inner tube assembly of the core drill (Figures 5, 7, 9, and 10).

Referring to claim 9, Skopec et al. disclose a core orientation device for a core drill wherein, when engaged by the inner tub assembly, the core orientation device forms a length of the inner tube assembly (Figures 5, 7, 9, and 10).

As to claim 10, Skopec et al. disclose a core orientation device for a core drill wherein the processing means includes a timer configured for ensuring that the processing means processes signals from the arrangement over predetermined time intervals (page 7, 4th paragraph; page 9, lines 12-22; Table 2).

Referring to claim 11, Skopec et al. disclose a core orientation device for a core drill, wherein the processor means includes integration means for integrating signals from the arrangement over a predetermined time interval (page 7, 4th paragraph; page 9, lines 12-22; Table 2).

As to claim 12, Skopec et al. disclose a core orientation device for a core drill, wherein the processor means includes timer means for determining predetermined intervals relative to a

reference time, and means for storing the processed data in the memory upon each of the predetermined intervals terminating (page 7, 4th paragraph; page 9, lines 12-22; Table 2).

Referring to claim 13, Skopec et al. disclose a core drill having a core orientation device comprising:

an arrangement for providing signals associated with a rotational orientation of the core orientation device (Figures 6, 7, and 10; page 8, Electronic Multishot Instrument (EMI): 1st paragraph);

processing means for processing the signals provided by the arrangement so as to provide processed data from which a measure of the rotational orientation of the core orientation device can be established, the measure being associated with the rotational orientation of the device at a particular moment in time (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22);

memory for storing the processed data (page 9, line 11); and

interface means having first means for storing the processed data in the memory and second means for accessing the memory to provide the measure of the rotational orientation of core orientation device when required (page 9, lines 12-22);

wherein the core drill comprises:

means for maintaining knowledge of the relative rotational orientation of a core drilled by the core drill and the core orientation device such that a measure of the rotational orientation of the core can be established using the measure of the rotational orientation of the core orientation device (page 7, 4th paragraph; page 9, lines 12-22; Table 2); and

means for relating the measure of the orientation of the core orientation device with the present orientation thereof such that the core orientation device can be rotated to reflect the measure of the orientation of the core orientation device (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22; Table 2).

As to claim 14, Skopec et al. disclose a core drill having a core orientation device wherein the means for maintaining knowledge of the relative rotational orientation of the core drilled by the core drill comprises a mechanism for preventing rotational movement about the length of the core sample, relative to the core orientation device (page 7, 2nd, 4th paragraph; page 9, lines 12-22; Table 2).

As to claim 16, Skopec et al. disclose a core drill having a core orientation device, wherein the core drill includes an outer tube assembly and an inner tube assembly with the inner tube assembly having a means for accommodating the core orientation device along the length of the inner tube assembly (page 4, Horizontal Core Acquisition section; page 5, Inner Barrel and Core Head section; pages 5-6, Stabilization section).

Referring to claim 17, Skopec et al. disclose a core drill having a core orientation device wherein the inner tube assembly includes a bearing allowing the means for accommodating the core orientation device to rotate relative to the outer tuber assembly but not relative to the core sample when the core is received by the inner tube assembly (page 4, Horizontal Core Acquisition section; page 5, Inner Barrel and Core Head section; pages 5-6, Stabilization section; Figures 5, 7, 9, and 10).

As to claim 18, Skopec et al. disclose a core drill having a core orientation device wherein the core orientation device is cylindrical and one end of the core orientation device

includes display and input means in the form of a LCD display and keypad, the end of the core orientation device being protected by the inner tube assembly when accommodated (page 9, lines 12-22).

Referring to claim 19, Skopec et al. disclose a core drill having a core orientation device, wherein the outer tube assembly includes a spacer for allowing the inner tube assembly to be fitted with the outer tube assembly when the core orientation device is accommodated (page 9, lines 1-9; Figures 5, 7, 9, and 10).

As to claim 20, Skopec et al. disclose a method of obtaining and orientating a core sample comprising:

moving a core drill having a core orientation device from a first location to a drilling location and thereafter operating the core drill to drill a core sample (Figures 6, 7, and 10; page 8, Electronic Multishot Instrument (EMI): 1st paragraph);

generating signals associated with a physical orientation of the core orientation device between the first location and the drilling location (Figures 6, 7, and 10; page 8, Electronic Multishot Instrument (EMI): 1st paragraph);

processing the signals to provide processed data from which a measure of orientation of the core orientation device at the drilling location can be established (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22); and

storing the processed data in memory such that the measure of the physical orientation of the core orientation device can be obtained therefrom (page 9, line 11); and

displaying a related measure of the orientation of the device and varying that measure upon rotation of the core sample and device such that a user can position the core sample and

device in the measured orientation for marking (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22; Table 2; Figures 11-12).

Referring to claim 21, Skopec et al. disclose a method of obtaining and orientating a core sample wherein the method includes maintaining knowledge of the relative physical orientation of the core orientation device and the core sample after the core sample has been drilled such that a measure of the orientation of the core sample taken by the core drill can be provided using the measure of the orientation of the core orientation device when at a location spaced from the drilling location (page 7, 2nd, 4th paragraph; page 9, lines 12-22; Table 2).

As to claim 22, Skopec et al. disclose a method of obtaining and orientating a core sample wherein the method includes initializing the orientation of the core orientation device at the first location, said initializing being performed by commencing said generating and processing the signals at the first location with the core orientation device in a known orientation (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22).

As to claim 24, Skopec et al. disclose an orientation device for providing an indication of the orientation of a core sample relative to a body of material from which the core has been extracted, the orientation device comprising means for determining and storing the orientation of the device at predetermined time intervals relative to a reference time, means for inputting a selected time interval, means for relating the selected time interval to one of the predetermined time intervals and providing an indication of the orientation of the device at the selected time interval (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22; Table 2; Figures 11-12).

Referring to claim 25, Skopec et al. disclose an orientation device for providing an indication of the orientation of a core sample relative to a body of material from which the core has been extracted attached to an inner tube assembly of a core drill and fixed against rotation relative thereto, the orientation device including means for attachment to the inner tube assembly (page 4, Horizontal Core Acquisition section; page 5, Inner Barrel and Core Head section; pages 5-6, Stabilization section; Figures 5, 7, 9, and 10).

As to claim 26, Skopec et al. disclose an orientation device for providing an indication of the orientation of a core sample relative to a body of material from which the core has been extracted including means for comparing the orientation of the device at the selected time interval to the orientation of the device at any subsequent time and providing an indication of the direction in which the device should be rotated in order to bring it into an orientation corresponding to the orientation of the device at the selected time (Table 2; Figures 11-12).

Referring to claim 27, Skopec et al. disclose an orientation device for providing an indication of the orientation of a core sample relative to a body of material from which the core sample has been extracted, the orientation device comprising

means for generating signals responsive to the orientation of the device (Figures 6, 7, and 10; page 8, Electronic Multishot Instrument (EMI): 1st paragraph),

a processor for receiving the generated signals and for processing the signals to generate orientation data representative of the orientation of the device (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22),

means for storing the orientation data at predetermined time intervals (page 9, lines 12-22),

means for inputting a signal representative of a selected time interval to the processor, the processor operating to relate the selected time interval to the predetermined time intervals and output a signal indicative of the orientation of the device at the selected time interval (page 7, 4th paragraph; page 9, lines 12-22; Table 2).

As to claim 28, Skopec et al. disclose an orientation device for providing an indication of the orientation of a core sample relative to a body of material from which the core sample has been extracted wherein data is generated representative of the orientation of the device at any subsequent time and the processor is operable to output a signal to a display means to provide a visual indication of the direction in which the device should be rotated at said subsequent time in order to bring the device into an orientation corresponding to its orientation at the selected time (page 7, 4th paragraph; page 9, lines 12-22; Table 2).

Referring to claim 29, Skopec et al. disclose an orientation device for providing an indication of the orientation of a core sample relative to a body of material from which the core has been extracted comprising an inner tube assembly and an orientation device according to claim 24 (Figures 5, 7, 9, and 10).

As to claim 30, Skopec et al. disclose an orientation device for providing an indication of the orientation of a core sample relative to a body of material from which the core sample has been extracted comprising an inner tube assembly and an orientation device according to the claim 27 (Figures 5, 7, 9, and 10).

Referring to claim 31, Skopec et al. disclose a method of providing an indication of the orientation of a core sample relative to a body of material from which the core sample has been extracted, the method comprising:

drilling a core sample from a body of material with a core drill having an inner tube assembly (page 6, Coring Parameters: lines 1-4 to page 7, lines 1-4);

recording the orientation of the inner tube at predetermined time intervals with reference to an initial reference time during said drilling (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22);

recording the specific time interval beyond the reference time at which the core sample was separated from the body of material (page 8, Electronic Multishot Instrument (EMI): 1st, 2nd, and 3rd paragraphs to page 9, lines 1-22);

removing the inner tube assembly and core sample contained therein from the body of material (page 7, lines 5-8); and

relating the recorded specific time to the recorded time intervals to obtain an indication of the orientation of the inner tube and consequently the core contained therein at the specific time interval (page 7, 4th paragraph; page 9, lines 12-22; Table 2).

Response to Arguments

Applicant's arguments filed 7/22/08 have been fully considered but they are not persuasive.

Referring claim 1, Applicant argues:

"First, claim 1 has been amended to incorporate the content of claim 5 to recite that the core orientation device can be rotated to reflect the measure of the orientation of the core device. The present application generally discloses a core orientation device that uses three internal silicon accelerometers operating along orthogonal directions X, Y and Z which measure the rotational orientation of the core orientation device about its longitudinal axis. See paragraphs

[71] and [72] of the present application. The measurements of rotational orientation are stored at minute intervals. See paragraph [76]…. By contrast, Skopec et al. does not disclose or suggest that, 'the core orientation device can be rotated to reflect the measure of the orientation of the core orientation device.' Instead, Skopec et al. discloses a different invention, using grooves and scribe lines, than that disclosed in the present application…. There is no disclosure in Skopec et al. that the core orientation device can be rotated to reflect the measure of the core orientation device."

Answer:

Skopec et al. disclose a core orientation device, e.g. Electronic Multishot Instrument (EMI) tool, which is a solid-state self-contained directional surveying device that measures tool altitude in relation to the earth's magnetic and gravitational fields. The gravity sensor array consists of three orthogonal accelerometers: Z, along the tool axis; X, perpendicular to the Z axis in line with the T-slot at the end of the tool; and Y, perpendicular to both the X and Z axis (Figure 6). The magnetic sensor array consists of three orthogonal fluxgate magnetometers which are configured parallel to the axes of the accelerometers (page 8, Electrnic Multishot Instrument (EMI) section: 1st paragraph.

Table 2 shows EMI Orientation Data, e.g. Time (minute intervals), Measured Depth, Magnetic Field Strength, Final Gravitational Magnetic Toolface, Core Groove Rotation.

Thus, Skopec et al. do disclose means for relating the measure of the orientation of the core orientation device with the present orientation thereof such that the core orientation device can be rotated to reflect the measure of the orientation of the core orientation device.

Same arguments for claim 13.

As to claim 20, Applicant argues:

"Third, claim 20 has been amended to incorporate the contents of claim 23 to recite displaying a related measure of the orientation of the device and varying the related measure of orientation of the device upon rotation of the core sample of the device such that a user can position the core sample and device in the measures orientation for marking. By contrast, Skopec et al., as discussed above does not disclose or suggest varying the related measure of orientation of the device upon rotation of the core sample of the device such that a user can position the core sample and device in the measured orientation for marking. Table 2 of Skopec et al. merely presents calculated data for a typical core survey as recorded by the EMI device. Figure 11 shows a core section with orientation grooves and Figure 12 shows a groove rotation report. In addition, the description of Figure 12 on page 16 of Skopec et al. only disclose a rotational comparison between the rotation of the principal scribe line and the rotation noted by the EMI. There is no disclosure in Skopec et al. that the core orientation device can be rotated to reflect the measure of the core orientation device.

Answer:

Skopec et al. disclose a core orientation device, e.g. Electronic Multishot Instrument (EMI) tool, which is a solid-state self-contained directional surveying device that measures tool altitude in relation to the earth's magnetic and gravitational fields. The gravity sensor array consists of three orthogonal accelerometers: Z, along the tool axis; X, perpendicular to the Z axis in line with the T-slot at the end of the tool; and Y, perpendicular to both the X and Z axis (Figure 6). The magnetic sensor array consists of three orthogonal fluxgate magnetometers

which are configured parallel to the axes of the accelerometers (page 8, Electrnic Multishot Instrument (EMI) section: 1st paragraph.

Table 2 lists EMI Orientation Data, e.g. Time (minute intervals), Measured Depth (feet), Magnetic Field Strength (Gammas), Final Gravitational Magnetic Toolface (degrees), Core Groove Rotation (degrees). Figure 12 shows "Observed Groove Rotation"

Therefore, Skopec et al. do disclose the core orientation device can be rotated to reflect the measure of the core orientation device.

Referring to claim 24, Applicant argues:

"Skopec et al. does not disclose or suggest means for inputting a selected time interval, means for relating the selected time interval to one of the predetermined time intervals and providing an indication of the orientation of the device at the selected time interval as recited in claim 24 of the present application.

Answer:

Table 2 lists EMI Orientation Data, e.g. Time (minute intervals), Measured Depth (feet), Magnetic Field Strength (Gammas), Final Gravitational Magnetic Toolface (degrees), Core Groove Rotation (degrees) for each time and measured depth intervals. Figure 12 shows "Observed Groove Rotation".

Thus, Skopec et al. do disclose means for inputting a selected time interval, means for relating the selected time interval to one of the predetermined time intervals and providing an indication of the orientation of the device at the selected time interval.

Same arguments for claims 27 and 31.

Note: one of the references cited by the Examiner (US Patent No. 6,592,875) was cited due to a typo error. The correct reference is US Patent No. 6,412,575, which is cited in the current Notice of References Cited.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOAN M. LE whose telephone number is (571)272-2276. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Toan Le

/Michael P. Nghiem/
Primary Examiner, GAU 2863

October 8, 2008